DOCUMENT RESUME

ED 198 857 JC 810 126

AUTHOR Spalding, Norma V.
TITLE Learning about Learning Disabled College Students.
PUB DATE Jun 80
NOTE 17p.; Paper presented at the Annual Institute for Directors of College Learning Centers (4th, Berkeley, CA, June 22-27, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Students; Diagnostic Tests; Educational Diagnosis; *Individualized Education Programs; Instructional Materials; *Learning Disabilities; Learning Problems; Learning Processes; Postsecondary Education
IDENTIFIERS San Jose State University CA

ABSTRACT

Information in this paper is presented to help college instructors identify and assist learning disabled (LD) students. The paper first explains what learning disabilities are, emphasizing that while LD students exhibit a discrepancy between apparent learning ability and actual academic achievement, they are not mentally retarded or emotionally disturbed. The proportion of LD to normal students is then discussed, based on enrollment figures at San Jose State University (SJSU), and the possible causes of learning disabilities are enumerated, including premature birth, childhood injuries, injuries to the head, child abuse, and genetic factors. The paper then presents a behavioral model of the learning process, based upon a hierarchy of brain processes which transfer the student's sensory perceptions into measurable output, such as reading, writing, and spelling. Tests which can be used to identify dysfunctioning brain processes are then enumerated, followed by a list of suggested reading materials designed to assist LD students in the areas of motivation, concentration, study skills, relaxation, reading, listening, mathematics, science, history, engineering, computer science, and business. Finally, the paper describes SJSU's individualized program for LD students, which focuses on the student's strengths, breaks down material to be learned into small steps or categories, and provides a structure for learning. (JP)

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ED198857

LEARNING ABOUT LEARNING DISABLED COLLEGE STUDENTS

by

Norma V. Spalding

Paper
presented to
Fourth Annual Institute
for
Directors of College Learning Centers

Berkeley, Calif.
June, 1980

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How you feel about an activity affects your interest in it and often your willingness to continue trying to learn to do it well. Try this experiment. Hold your right foot out in front of you and make a circle with your foot. Now take a pen or pencil and write your name while continuing to make the circle with your foot. Concentrate on it. Everyone is watching you. How do you feel?

You are intelligent. You are not lazy, and you certainly are trying. What you are experiencing are the same feelings that the learning disabled student feels when you ask him to do a task which his central nervous system cannot process. Circling your foot and writing your name affect areas of the brain that interfere with one another. Similarly the learning disabled student has interference when he tries to learn from your instructions if they are not geared to his unique learning style. Whether you call it Learning Disability, Minimal Brain Damage, Strephosymbolia, or Dyslexia, you are identifying a problem in the central nervous system which interferes with the normal processing of sensory inputs that we call learning.

This paper will address briefly several aspects of the problem among college students. First, what is a learning disability? Second, we will examine briefly some demographics and causes of the problem. Next we will look at a behavioral model of the learning process and a hierarchy of the essential learning processes. Then we will discuss a program for testing and identification of the learning disabled student; and finally the development of an individual educational program to remediate the student's weaknesses and enable him to learn through the use of his strenghts.

What is a learning disability? We usually define it by what it is not. The student is not retarded, not blind or deaf, nor does he have other sensory deprivation. He is not emotionally disturbed, has not lacked the opportunity to

learn, does not necessarily have a poor or deprived home background nor does he have second language interference. It is a puzzling question. He does not learn in the regular classroom, yet he has good intelligence, good parents, good teachers and goes to a good school.

The National Advisory Committee on Handicapped Children under the leadership of Kirk (1968) offerred the following definition:

"Children or adults with special learning disabilities exhibit a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written languages. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual learning or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage."

The model for identifying the learning disabled college student is a discrepancy model. There is a discrepancy between the student's apparent ability to learn and his actual academic achievement. There is often a pattern of one day he knows it, the next day he has never heard of it. The LD student in the college classroom has a pattern of tardiness, inattention, disruption, manipulation, and inability to complete a task. He usually has very poor handwriting, with frequently transposed letters and poor visual-motor control. Typically his spelling is atrocious.

Community Colleges, under California law AB 77, provide an education for LD students. These students are referred by outside agencies; such as mental health agencies, Department of Vocational Rehabilitation, private learning centers, County social workers, psychologists, and CETA. Within college, they are most frequently self-referred, although many are sent to the learning

center by English and Reading instructors, counselors and other supportive services.

At San Jose State University, the learning disabled student comes in as a "special admit", one of the 4% admitted because of outstanding abilities in music, sports, or given special consideration through the Educational Opportunity Program or the University Alternative Program, for ex-offenders.

The number of learning disabled students in college probably numbers less than 2% of the population. The exact number depends, of course, on how the population is defined. The program at Cabrillo College, for example, has two certificated faculty and one teaching assistant for a program of approximately 150 students. This program also includes 30 peer tutors who work less than 25 hours each per week. The total college population is approximately 5800 students. All adults over 18 years of age may attend a community college.

At San Jose State University we identify less than 50 students each year because of our screening processes. The number of specially admitted students varies with the rise and fall of the total student population, which at present is approximately 26,000 at San Jose State University.

Among educationally handicapped and learning disabled students in elementary and secondary schools, there is a ratio of six boys to one girl. It is my experience that a very similar ratio is found among college students.

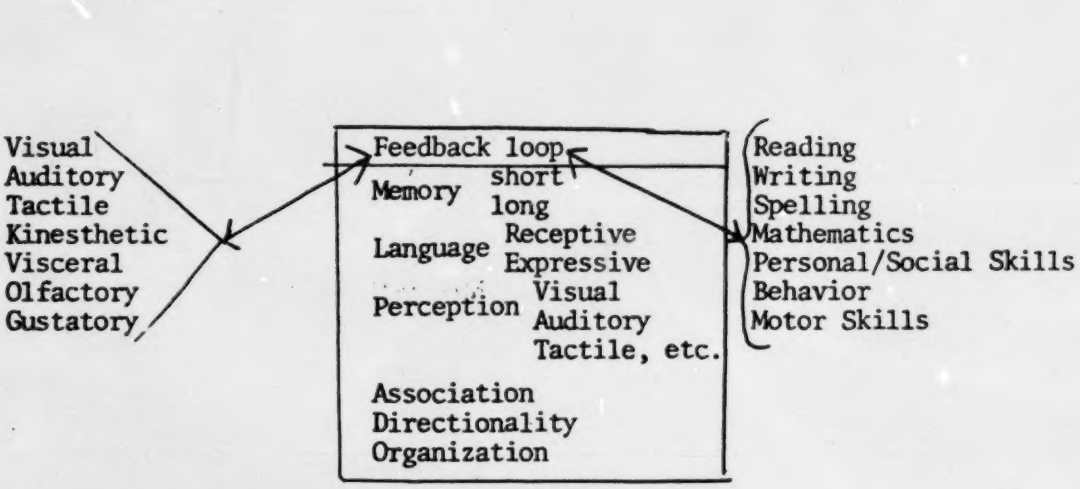
The causes of learning disabilities are multiple. Poor prenatal care and teenage motherhood are frequently mentioned. Premature birth is also a frequent cause. From 1945-1955, 65% to 70% of premature babies were retarded or cerebral palsied. From 1955-1965, this number was reduced to 25% to 30% through improved medical treatment. Since 1965, it has been cut to 6%. However, the number of learning disabled among premature babies has risen significantly. Other causes are poor nutrition as infants, birth injuries, childhood injuries, auto injuries in crowded city streets, falls and bumps

on the head. Frequently, too, LD is found among victims of child abuse.

It is possible in some cases that genetic factors are implicated. It is common, upon investigation, to discover a father, a brother, and uncle, etc. who never learned to read. Occasionally, the mother may have had difficulty in learning symbol systems, but again, the ratio is close to six males to one female.

Other basic skills are also frequently involved, such as the ability to learn mathematics, called dyscalculia, even though the student demonstrates good intelligence.

Whatever the cause, the learning disabled student does not process sensory input in the same manner as does his normal counterpart. At this point, let us look at a simple behavioral model of learning.



The sensory input is processed in the black box or brain and is transformed by the brain into various measurable behaviors, such as reading, and writing. The feedback loop monitors the output and enables the learner to modify and correct his learned responses. What we call learning disabilities are various brain processes which the diagnostician assumes are defective based on errors in the output.

Lerner (1976) describes a hierarchy in the essential learning processes. A breakdown at any level can lead to learning disabilities. At the base is attention which leads to perception or recognition of the matter. Next comes cognition which attaches meaning to the perceived object. Then the learner describes, categorizes and defines it, a process called conceptualization. This leads to communication, which can be either verbal or symbolic.

How does the diagnostician identify the learning disabled college student? How does he determine which processes are defective?

A series of tests are given to the student suspected of having a learning disability. The tests used are a matter of individual judgment by the LD Specialist and usually reflect the training and background of the specialist. We tend to use tests we are very familiar with as well as seeking to limit the number to as few as possible, since testing is very time-consuming, and frequently the tests merely corroborate information discovered earlier.

At San Jose State University, we use the WAIS, the WRAT, the QNST and the SDRT. This battery takes about three hours to administer. We also ask the students to have a Keystone telebinocular test given by the Health Service and an auditory acuity test given by the Speech and Hearing Department. If there are further questions, tests from among the following lists may be given.

ACHIEVEMENT/ACADEMIC TESTS

Ann Arbor Learning Inventory

Basic Educational Skills Test

Brigance Inventory of Basic Skills

Detroit Test of Learning Aptitude

Durrell Test of Reading Difficulty

Gates-MacGinitie Reading Tests

Illinois Test of Psycholinguistic Abilities (ITPA)

Informal Assessments: Oral Language
Written Language

Key-Math Diagnostic Arithmetic Test

Peabody Individual Achievement Test (PIAT)

Peabody Picture Vocabulary Test (PPVT)

Slosson Intelligence Test

Stanford Diagnostic Reading Test

Steenburgen Quick Math Screening Test

Test of Written English

Test of Written Spelling

Wechsler Adult Intelligence Scale

Wide Range Achievement Test (WRAT)

Woodcock-Johnson Psycho-Educational Test Battery

Woodcock Reading Mastery Test

PERCEPTUAL/COGNITIVE TESTS

Acuity Screening: Visual: Keystone Telebinocular
Auditory: Tracor Manual Audiometer

Baldwin Auditory Discrimination Test

Bender Visual Motor Gestalt Test

GFW Auditory Skills Test Battery

Jordan Left-Right Reversal Test

Lindamood Auditory Conceptualization Test

Malcomesius Specific Language Disability Test

Melvin-Smith Receptive-Expressive Observation

Money Standardized Test of Direction Sense

Motor-Free Visual Perception Test

Quick Neurological Screening Test

Ravens Progressive Matrices

Seguin Form Board

Test of Visual-Motor Integration

Visual-Auditory Digit Span

Wechsler Memory Scale

Wepman Test of Auditory Discrimination

Materials used to teach the LD college students range from teaching him to SQRRR using his college textbooks, through various study skills texts, down to perceptual activities found in the Barnell-Loft materials and the Michigan Tracking System.

Included here are only a brief sampling of the materials available in the SJSU Reading Lab Program. Other materials are available from the Learning Resources Program. All of these programs are located in the SJSU School of Education.

REMEDIATION MATERIAL SUGGESTIONS

Motivation:

Raygor, Alton. Systems for Study

Wood, Nancy. College Reading and Study Skills.

Test-taking
Preparing for Tests
Taking Objective Tests
Writing answers to essay questions:

Raygor, Alton. Systems for Study

Wood, Nancy. College Reading and Study Skills.

Master Reading. "Examination Strategies"

Study Skills Workbook

Concentration:

Raygor, Alton. Systems for Study.

Wood, Nancy. College Reading and Study Skills.

Scheduling Time Well:

Raygor, Alton. Systems for Study.

Wood, Nancy. College Reading and Study Skills.

Study Skills Workbook.

Relaxation Techniques:

Tape: "Relaxation"

Reading too slowly:

Controlled Reader

Super Controlled Reader

A Fast Course in Speed Reading

Master Reading:

"Fundamentals of Speed Reading"

"Practical Speed Reading"

"Skimming"

"Scanning"

"Flexible Reading"

Larson, Judith, Rapid Reading.

Wood, Nancy. College Reading and Study Skills (10 Labs)

Taking Good Notes:

Sack-Yourman Note - taking tapes

Wood, Nancy. College Reading and Study Skills

Study Skills Workbook

Raygor, Alton. Systems for Study.

Finding Main Ideas:

Raygor, Alton. Reading for the Main Idea.

Understanding the Main Idea.

Getting the Main Idea

Probe: Main Ideas

66 Passages

88 Passages

100 Passages

Jamestown Readers

Skill at a Time: Getting the Main Point.

Developing Your Memory:

Adams, Spira. Reading Beyond Words.

Raygor, Alton. Systems for Study.

Study Skills Workbook

Skimming:

Fry. Skimming and Scanning

Master Reading:

"Skimming"

"Scanning"

Reading Your Textbook:

Probe: Textbook Assignments

Wood, Nancy. College Reading and Study Skills.

Study Skills Workbook

Pronouncing New Words:

Phonics Workbook

Steps to a Better Vocabulary

Free to Read

Slingerland: Word Patterns

Following Directions:

Exercises in Study Skills Files

Listening:

Sack-Yourman Note-taking tapes

The Hobbit (tapes)

The Greek Myths (tapes)

Reading in Academic Areas

Math:

Reading in the Content Fields: Mathematics

Science:

Reading in the Content Fields: Science

Croft and Brown. Science Readings for Students of English as a Second Language.

English Literature

Chapters

Skill at a Time (Series)

History:

Reading in the Content Fields: Social Science

Engineering:

Glendinning. English in Mechanical Engineering.

English Language Services, Inc. Special English Engineering.

Hall, Eugene. The Language of Mechanical Engineering in English.

Computer Science:

Keegel, John. The Language of Computer Programming in English.

Business:

English Language Services, Inc. Special English Banking.

Oppenheim, Peter. The Language of International Finance in English: Money and Banking.

The key to working with the LD college student is found in an individualized program for teaching him. At SJSU we use teachers who are in training as LD Specialists. We use the students' strengths, whether language, visual, auditory, or tacitle, and minimize his weaknesses. We teach him to use a tape recorder for lectures if he writes too slowly or takes poor notes, or if his auditory skills in general are poor. We give him counseling and emotional support. We often use the neurological impress method to increase his fluency and speed. We combine this method with SQRRR and frequent oral recitation to increase the ability to recall material.

We particularly try to teach him to learn. For example, we strengthen memory skills by helping him to 1) practice auditory rehearsal by repetition; 2) visualize by use of mapping techniques; 3) recite out loud to reinforce his visual memory; 4) create mnemonic devices to trigger key words; and 5) find categories and patterns within the material to improve retention. We simplify, by teaching him to break material to be learned into small categories or steps.

Finally, we work to provide structure for his learning. We teach him to develop good learning habits by sitting in the same place devoted only to study, by noting his habits and practicing to gradually lengthen the time devoted to study, by rewarding himself for developing regular habits of studying a particular subject at the same time each day, etc.

We have looked at the definition of a learning disability, examined its causes, and seen a behavioral model of

the learning process. This paper has provided the reader with a list of tests commonly used to identify the strengths and weaknesses of the LD college student, as well as a list of materials used at SJSU for remediation. We have also briefly touched on some of the techniques which can be used to develop an individual educational plan for learning. Let us, in conclusion, then, turn again to the feelings which LD engenders within the student. Take a 3 x 5 card and put it on your forehead. Now write the word SPURN. The thought patterns and feelings of inadequacy which you notice are similar to those which the LD student feels. He thinks he can't learn. You must teach him that he can.

Attached to this paper is a historical bibliography of the field of learning disabilities. It includes research by the best-known writers in the field, as well as articles written by trend-setters, such as Feingold, Cott, and Graber.

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